heries workers with an interest in anthropology, ns, and primitive fishing methods will find this prehensive and useful volume. The many kinds irs, traps, nets, spears, and other fishing gear by the several Indian tribes of this region are bed and illustrated, and information presented eir use and construction. Also discussed are g customs, ownership of aboriginal fishing , and processing and cooking of fish by Indians. is an extensive bibliography, a glossary of and an index.

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PRINCIPLES OF FISHERIES DEVELOPMENT. *By C. J. Brandemanne. North-Holland Publishing Company, Amsterdam, Netherlands. 1959. xiv, 677 pp., 3 figs. $12.00.*

This volume analyzes the multitude of factors influencing the structure of fisheries and establishes a pattern of principles to serve as a basis for fishery development policy. From comparative material, economic and fishery literature, and personal experience, the author presents an amazing insight into the properties of fisheries development. "Actual sea fisheries" are the primary subject with the notation that "onshore" or coastal fisheries, though highly productive, offer few technical problems. It appears, however, that the basic governing principles would usually apply to the coastal fisheries as well.

Initial sections deal with fish populations, methods of harvesting, and use of the resource, including a discussion of eumetric fishing which, though fine in theory, cannot at present be applied in practice. The usual entrepreneur does not care whether fishing is eumetric or not, so long as he realizes a profit, and the smart entrepreneur may make a handsome profit when it is dis-eumetric. Most of the discussion concerning manageable variables in eumetric fishing, gear selectivity, and fishing intensity, is directed toward the economic effects of changes as a means of control, *e.g.*, increased fishing effort generally results in a lower catch-per-unit of effort which eventually restricts the number of participants that can fish profitably. Greater detail on the biological effects of the common means of fishing intensity regulation, such as the gear limitations and catch quotas in the Pacific halibut fishery, would have enhanced the analysis.

Features of dynamic fisheries are expounded and supplemented by examples of development drawn from past and existing fisheries. Reflecting the author's experience as adviser to a Holland trawler company, emphasis is placed on expansion of the North Atlantic trawl fisheries although fisheries of other areas are included. The course of the European North Atlantic fishery since the Middle Ages is followed from its initial hook-and-line exploitation through phases characterized by improvement of transportation and preserving methods, introduction of steam power, development of the purse seine and beam trawl, invention of otter boards for trawling, and several more. These culminate with today's highly technical fishery employing vessels such as the British super trawler *Fairtry* on which the catch is mechanically filleted and deep-frozen at sea.

Complementary industries are introduced but without great detail. Although stating that the economic value of a fishery cannot be considered as merely the price paid the fisherman for his catch (as is common practice in most cases at present), the many industries associated with and arising from fishing are only mentioned. A method of estimating the economic value of the subsidiary industries stimulated by the "powerful income-generator", fishing, would have been appropriate in this discussion. The inherent and acquired structural problems of the fishing industry are revealed as the final section of Part III. Of special interest are the occasional comparisons between fishing and similar production industries.

Principles and problems of economic fishery development presented in detail, comprise the remainder of the treatise. Knowledge obtained while Head of the Institute for the Development of Sea-fisheries in the Netherlands East Indies, is utilized to great avail in depicting the course of fishery development. It is beyond the realm of this reviewer to attempt a critical evaluation of the many economic principles presented. Worthy of special note is the wealth of technical and background information found in notes following each chapter which forms an excellent reference source on many subjects.

Although most useful to the fishery administrator and the economist, the explanation of economic principles governing fishery development is of value to any biologist in better understanding the complexity of a fishery.

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AN INTRODUCTION TO THE BEHAVIOUR OF INVERTEBRATES. *By J. D. Carthy. George Allen and Unwin Ltd., London. 1958. 380 pp., 148 figs., 4 plates, 15 tables. 45s.*

"While preparing this book, it has become obvious that greater attention has been paid to the behaviour and sensory physiology of insects than to the rest of the invertebrates. An attempt has therefore been made to strike a balance and as far as possible to draw conclusions which may be applicable throughout the invertebrate subkingdom — though the very diversity of those animals militates against this. The mass of work still waiting to be done on invertebrates other than insects stands accentuated once again."

This opening paragraph in the preface stipulates two important objectives: 1) to achieve a balance between insects and the remainder of the invertebrates in the presentation and, 2) to formulate from the wealth of data presented, principles fundamental to the development of a unifying theory of invertebrate behavior. We may justifiably weigh the content of the book against these two points.

In the first case a tally of the forms listed in the species index (which in itself is a commendable